THE
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*Examining the Atmosphere and Atmospheric Resource Management*

# Thunder returns to the prairie

By Darin Langerud

A long, cold winter has finally passed and the familiar rumble of imminent rain has returned to the plains. As spring arrives, so does the change from flying flakes to falling drops. Temperatures warm and humidity rises creating an atmosphere which allows the development of the familiar, tall, billowing thunderstorm.

A towering thunderstorm roams the North Dakota plains. PHOTO BY BRUCE BOE

While they are impressive in their power and appearance, thunderstorms maintain a paradoxical place in our world. They are at the same time the giver of life to planted crops and a peril to them through high winds, heavy rain, hail, and even tornadoes. Our relationship with thunderstorms has existed for thousands of years, but only recently has our ability to predict and even manage them become a reality.

Modern meteorology is relatively young, its scientific basis largely derived over the last hundred years. Furthermore, instrumentation such as satellites and radars have only been around for fifty years or less. With improving technology and better measurements of the atmosphere, prediction of thunderstorms is in a constant state of improvement. The Storm Prediction Center, located in Norman, Oklahoma, specializes in forecasting the development and potential severity of thunderstorms on a daily basis. They also issue severe thunderstorm and tornado watches for the United States. You can access their forecasts on the web at www.spc.noaa.gov. Severe thunderstorm and tornado warnings are issued by your local National Weather Service office, one each located in Bismarck and Grand Forks, ND. They can also be accessed on the web at www.crh.noaa.gov/bis, or www.crh.noaa.gov/fgf.

Prediction is one thing, management of thunderstorms is another. A number of cloud seeding programs operate each year in the western United States attempting to do just that. Clouds are seeded, usually with equipment carried by aircraft, to either induce more precipitation, decrease hail damage, or both. Programs of this nature have been growing in scope over the last five years as water availability has become stressed and cloud seeding technology has improved. Right here in North Dakota, five counties and part of a sixth are involved in a cloud seeding program to increase rainfall and reduce hail damage. Long term evaluations of the program indicate a reduction in crop hail damage of 45 percent and an increase in rainfall of about 10 percent. Other states report similar results.

While our ability to predict and manage thunderstorms is better than ever, there is still room for improvement. Faster computers and better instrumentation will continue to improve weather forecasting. Further research into the field of cloud seeding will also improve our ability to manage thunderstorms for the benefit of man. ■

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